UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,417	10/20/2003	Manoj K. Agarwal	JP920030099US1	2532

7590 08/23/2007		EXAMINER
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MAIL DATE	DELIVERY MODE
08/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/689,417	AGARWAL ET AL.
Office Action Summary	Examiner	Art Unit	
	Insun Kang	2193	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11 June 2007_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-4 and 6-35_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4,6-10 and 16-35_ is/are rejected.

7)☒ Claim(s) _11-15_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 6/11/2007.

2.   As per applicant's request, claim 5 has been cancelled and claims 1, 6, 20-25, 27, 28, and

30 have been amended. Claims 1-4 and 6-35 are pending in the application.

Allowable Subject Matter

3.   Claims 11- 15 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

Specification

4.   The disclosure is objected to because of the following informalities:

The disclosure is objected to because it contains an embedded hyperlink and/or other

form of browser-executable code (i.e. page 16; Note: the applicant needs to delete all the links in

the specification such as in page 16, line 3, page 36, line 30, and page 17, line 3). Applicant is

required to delete the embedded hyperlink and/or other form of browser-executable code. See

MPEP § 608.01. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-4, 6-10, 20-25, and 30-35 are rejected under 35 U.S.C. 102(b) as being

anticipated by Keller et al. ("An Active Approach to Characterizing Dynamic Dependencies for

Problem Determination in a Distributed Environment," 2001) hereafter Keller.

Per claim1:

Keller discloses the invention as claimed including a method for determining run-time

dependencies between logical components (i.e. sec 4.1, p5, lines 7-8),

- monitoring run-time activity of each of a first logical component and a second logical

component of the data processing environment, said monitoring comprising determining a first

activity period for said first and a second activity period for said second logical component (i.e.

section 4.2 Detecting and Characterizing Operational Dependencies, page 5, lines 4-9; i.e. page

6, step 4, lines 1-15, , page 7 Fig 2)

- comparing the monitored run-time activity of the first logical component with the monitored

run-time activity of the second logical component to identify correlations between the monitored

run-time activity of the first and second logical components (i.e. page 6, step 4, lines 1-13, page

7 Fig 2);

- said comparing comprising comparing said first activity period and said second activity period

to identify correlations between said first logical component and said second logical component

(i.e. "a regression line relating the mean **log response time** to the perturbation level. The

regression line is the key to automatically identifying and characterizing dependencies, page 10

sec. 5.5. Data analysis, last two lines; page 5 4.2 Active Dependency Discovery steps 1-4).

- and in response to identification of a positive correlation between the monitored run-time

activity of the first and second logical components, recording the existence of a dependency

relationship between the first and second logical components (i.e. page 6, step 4, lines 1-15, ,

page 7 Fig 2; page 5, 4.2 Active Dependency Discovery steps 1-4; "collecting as much of the

dependency model as possible," page 5, lines 12-13; see Figure 2 in page 7; "each such graph

maps the dependencies between one user interaction and the particular database tables upon

which that interaction depends," page 2, third paragraph).

Per claim 2:

Keller further teaches:

- monitoring run-time activity data of each of a plurality of logical components additional to said

first and second logical components(i.e. section 4.2 Detecting and Characterizing Operational

Dependencies, page 5, lines 4-9) ;

- comparing the monitored run-time activity of the first logical component with the monitored

run-time activity of the plurality of logical components to identify positive correlations between

the monitored run-time activity of the first logical component and the monitored run-time

activity of any of the plurality of logical components; (i.e. page 6, step 4, lines 1-13, page 7 Fig

2);

-and recording the existence of a dependency relationship between the first logical component

and any of the plurality of logical components for which a positive correlation is identified (i.e.

page 6, step, lines 1-13, page 7 Fig 2; page 5, section 4.2 Active Dependency Discovery steps 1-

4; "collecting as much of the dependency model as possible," page 5, lines 12-13; see Figure 2 in

page 7; "each such graph maps the dependencies between one user interaction and the particular

database tables upon which that interaction depends," page 2, third paragraph).

Per claim 3:

Keller further teaches:

 - aggregating the recorded dependency relationships of the first logical component(i.e.

"collecting as much of the dependency model as possible," page 5, lines 12-13; see Figure 2 in

page 7; "each such graph maps the dependencies between one user interaction and the particular

database tables upon which that interaction depends," page 2, third paragraph).

Per claim 4:

Keller further teaches:

-comparing the monitored run-time activity of the second logical component with the run-time

activity of each of the plurality of logical components to identify positive correlations between

the monitored run-time activity of the second logical component and the monitored run-time

activity of any of the plurality of logical components (i.e. page 6, step 4, lines 1-13, page 7 Fig

2);

 - recording the existence of a dependency relationship between the second logical component

and any of the plurality of logical components for which a positive correlation is identified (i.e.

page 6, step 4, lines 1-13, page 7 Fig 2; page 5, section 4.2 Active Dependency Discovery steps

1-4; "collecting as much of the dependency model as possible," page 5, lines 12-13; see Figure 2

in page 7; "each such graph maps the dependencies between one user interaction and the

particular database tables upon which that interaction depends," page 2, third paragraph).

Per claim 6:

Keller further teaches:

- wherein the comparing step comprises determining whether the activity period of the first

logical component contains the activity period of the second logical component (i.e. "where I

indexes the transaction type…is the value of the **mean log response time for the k'th execution**

of the i'th transaction type, j indexes the 10 database table," page 11, lines 9-11; "a regression

line relating the mean **log response time** to the perturbation level. The regression line is the key

to automatically identifying and characterizing dependencies, page 10 sec. 5.5. Data analysis,

last two lines; page 5 4.2 Active Dependency Discovery steps 1-4).

Per claim 7:

Keller further teaches:

- wherein the step of monitoring run-time activity comprises monitoring invocations of the first

and second logical components, and the comparing step comprises comparing the number of

invocations of each of the first and second logical components within a monitoring period (i.e.

"if αij is statistically non-zero…, then we conclude that transaction type i depends on table j with

a strength of αij, page 11 lines 15-17; "where **i indexes the transaction type (1….,14)…is the**

value of the mean log response time for the k'th execution of the i'th transaction type, j

indexes the 10 database table," page 11, lines 9-11; page 5 4.2 Active Dependency Discovery

steps 1-4).

Per claims 8 and 9:

Keller further teaches:

-monitoring run-time activity for a plurality of executions of each of a first and a second logical

component, comparing the monitored run-time activity for the plurality of executions of the

second logical component with the monitored run-time activity for the plurality of executions of

the first logical component (i.e. section 4.2 Detecting and Characterizing Operational

Dependencies, page 5, lines 4-9; page 11, lines 9-11) ;

-determining a proportion of executions of the first and second logical component for which a

positive correlation is identified between the compared run-time activity of the first and second

logical components (i.e. **"With the data thus reduced and linearized**, it becomes easy to fit a

regression line relating the mean log response time to the perturbation level...key to

automatically identifying and characterizing dependencies: **a statistically nonzero slope for**

this line indicates the existence of a dependency, and the magnitude of the slope

characterizes its strength," page 10, last three lines and page 11 first three lines);

-and recording in association with the recorded dependency relationship a value representing the

determined proportion of executions of the first logical component for which a positive

correlation is identified (i.e. page 6 step 4, lines 1-15, page 7 Fig 2; page 5 4.2 Active

Dependency Discovery steps 1-4; "collecting as much of the dependency model as possible,"

page 5, lines 12-13; see Figure 2 in page 7; "each such graph maps the dependencies between

one user interaction and the particular database tables upon which that interaction depends," page

2, third paragraph).

Per claim 10:

Keller further teaches:

-determining a proportion of executions of the second logical component for which a positive

correlation is identified between the compared run-time activity of the first and second logical

components (i.e. **"With the data thus reduced and linearized**, it becomes easy to fit a

regression line relating the mean log response time to the perturbation level...key to

automatically identifying and characterizing dependencies: **a statistically nonzero slope for**

this line indicates the existence of a dependency, and the magnitude of the slope

characterizes its strength," page 10, last three lines and page 11 first three lines);

-and recording in association with the recorded dependency relationship a value representing the

determined proportion of executions of the second logical component for which a positive

correlation is identified (i.e. page 6 step 4, lines 1-15, page 7 Fig 2; page 5 4.2 Active

Dependency Discovery steps 1-4; "collecting as much of the dependency model as possible,"

page 5, lines 12-13; see Figure 2 in page 7; "each such graph maps the dependencies between

one user interaction and the particular database tables upon which that interaction depends," page

2, third paragraph)

-and generating a weight value (i.e. "the dependency edge represented by **label w3** in Figure 1

has been expanded to include the operational dependency edges," page 7, third paragraph, lines

2-3, "The overall **dependency strength w3 represents a weighted average** of the strengths of

the operational dependency edges..., with **the weights determined by** the typical applied

workload," see the note recited in page 7; page 3, sec 2. Dependency Models, lines 3-4)

- comprising a combination function of the determined proportions of executions of the

first and second logical components, and storing the weight value in association with the

recorded dependency relationship(i.e. page 6, step 4, lines 1-15, page 7 Fig 2; page 5 4.2 Active

Dependency Discovery steps 1-4; page 5, lines 12-13; see Figure 2 in page 7).

Per claim 20, this claim is another version of the claimed method discussed in claim 3,

wherein all claim limitations also have been addressed and/or covered in cited areas as set forth

the above.

Per claim 21:

Keller further teaches:

- sorting the dependencies into an order determined by a sorting heuristic, and the step of

analyzing the set of logical components comprises analyzing components of the set of

components in said determined order (i.e. the dependency weights sorted as {w1, w2, w3...w8}

in Figure 1 in page 3 and the dependencies are sorted by their strength in Item table in Figure 5).

Per claim 22, this claim is another version of the claimed method discussed in claim 1,

wherein all claim limitations also have been addressed and/or covered in cited areas as set forth

the above.

Per claims 23 and 24, they are the device versions of claim 1, respectively, and are

rejected for the same reasons set forth in connection with the rejection of claim 1 above.

Per claim 25, it is the apparatus version of claim 1, respectively, and is rejected for the

same reasons set forth in connection with the rejection of claim 1 above.

Per claim 30-35, they are another versions of the claimed methods discussed in claims 1-

4 and 6-9, wherein all claim limitations also have been addressed and/or covered in the cited

areas as set forth the above.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claims 16-19 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Keller et al. ("An Active Approach to Characterizing Dynamic Dependencies for Problem

Determination in a Distributed Environment," 2001) hereafter Keller, as applied to claims above

1-13, 22-25, and 30-35, in view of Kar et al. ("Dynamic Dependencies in Application Service

Management," June 2000) hereafter Kar.

Per claim 16:

Keller disclose, "monitors for performance, availability, and any other relevant metrics (page 5,

Step 2, line 1)" and active dependency discovery system (section 4.2, page 5). Keller does not

explicitly teach that the disclosed system is implemented as an agent.

However, Kar teaches generating an event in response to a monitoring agent polling the first and

second components for information relating to the processing of requests and accessing run-time

activity data via the monitoring interface was known in the pertinent art, at the time applicant's

invention was made, to autonomously accomplish tasks on behalf of its user (i.e. "The

application service agent is the focal point for managing an individual service offering...The

agent receives event notifications from the MLMs through the platform API and updates the

view of the service that it maintains," see page 6, section 5 Dependency Architecture, Figure 3

and lines 13-23; "a service agent obtains the configuration file generated at the application

dependency analysis phase," page 6, right col. Last two lines; page 7, first two lines). It would

have been obvious for one having ordinary skill in the art to modify Keller's disclosed system to

incorporate the teachings of Kar. The modification would be obvious because one having

ordinary skill in the art would be motivated to obtain abilities such as autonomy, flexibility etc

by using an agent concept that is applied in Kar (i.e. page 6, right col. Last two lines).

Per claim 17:

Kar further teaches:

- wherein the monitoring agent comprises an aggregator for aggregating run-time activity data

accessed via the monitoring interface(i.e. "The functional dependencies yield a generic service

model while the structural part provides detailed information on the involved component. While

the functional model is stored at the MLMs and the service management agent maintains a

structural view," section 5, right column, last paragraph).

Per claim 18:

Kar further teaches:

- wherein the monitoring agent comprises program code for computing run-time activity metrics

from the run-time activity data accessed via the monitoring interface (i.e. "through the platform

API, page 6, section 5, paragraph 2).

Per claim 19:

Kar further teaches:

- wherein the monitoring agent is configured to poll the first and second logical components via

the monitoring interface (i.e. section 5, page 7 lines 32-42; page 6, section 5, paragraph 2).

Per claim 26:

Keller does not explicitly teach that the dependency generator is configured to generate a

CIM_dependency class instance to represent an identified positive correlation, the apparatus

further comprising a CIM object manager configured to record dependency information within a

CIM repository in the data storage unit. However, Kar teaches that such a CIM data model was

known in the pertinent art, at the time applicant's invention was made, to describe common

definitions of managed elements or information across the enterprise (i.e. "In the Common

Information Model (CIM), dependencies...being usually perceived as a specific kind of

association...are modeled as classes," page 2, section 2.1, second paragraph, lines 1-6). It would

have been obvious for one having ordinary skill in the art to modify Keller's disclosed system to

incorporate the teachings of Kar. The modification would be obvious because one having

ordinary skill in the art would be to define the associations between components, easily track the

relationships and interdependencies between managed elements and information throughout the

network (i.e. "the Common Information Model (CIM)," page 2, section 2.1, second paragraph,

lines 1-6).

Per claims 27-28, they are the system versions of claim 16 respectively, and are rejected

for the same reasons set forth in connection with the rejection of claim 16 above.

Per claim 29:

Keller further teaches:

- a fault management application program (i.e. "root-cause," abstract; section 4.1, page 5,

  line 5).

Response to Arguments

9.   Applicant's arguments filed 6/11/2007 have been fully considered but they are not

persuasive.

In response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e., the start and

end times of activity periods, remark, page 21) are not recited in the rejected claim(s). Although

the claims are interpreted in light of the specification, limitations from the specification are not

read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant states that Keller does not discloses determining whether the activity period

of the first logical component contains the activity period of the second logical component

(remark, page 21).

In response, Keller discloses that the regression line is to identify and characterize the

dependencies between components. The dependency of one node on other node is identified and

the dependency strength is calculated (page 10 sec. 5.5. Data analysis, last two lines; page 5 4.2

Active Dependency Discovery steps 1-4; page 9, section 5.4 Results, first paragraph).

Conclusion

10.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The

examiner can normally be reached on M-F 8:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, MENG AI AN can be reached on 571-272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300. Information

regarding the status of an application may be obtained from the Patent Application Information

Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available

through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from

a USPTO Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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